

State of New Mexico
Energy, Minerals & Mining Resources Department

Form C - 102

OIL CONSERVATION DIVISION

2040 South Pacheco
Santa Fe, NM 87505

2001 JUN 26 AM 9:25

☐ AMENDED REPORT

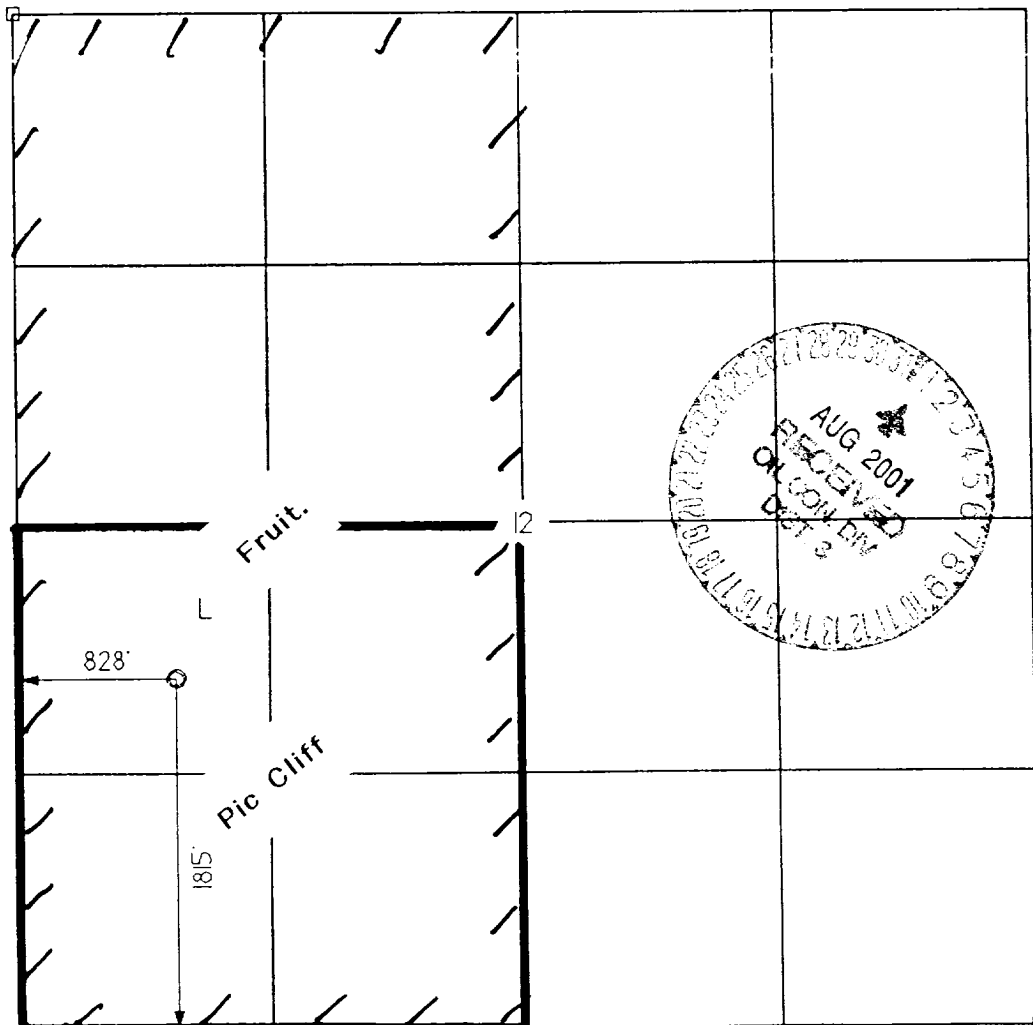
WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number 30-045-30712	Pool Code 71629 & 78160	Pool Name FRUIT. COAL & HARP. HILL PC
Property Code 28588	Property Name WF FEDERAL	Well Number 12 - 2
GRID No. 019219	Operator Name RICHARDSON OPERATING COMPANY	Elevation 5948'

Surface Location									
UL or Lot L	Sec. 12	Twp. 30. N.	Rge. 14. W.	Lot Idn.	Feet from > .1815'	North/South SOUTH	Feet from > 828'	East/West WEST	County SAN JUAN

Bottom Hole Location If Different From Surface									
UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from >	North/South	Feet from >	East/West	County
Dedication 160 PL 314.8 PL	Joint ?	Consolidation		Order No.					

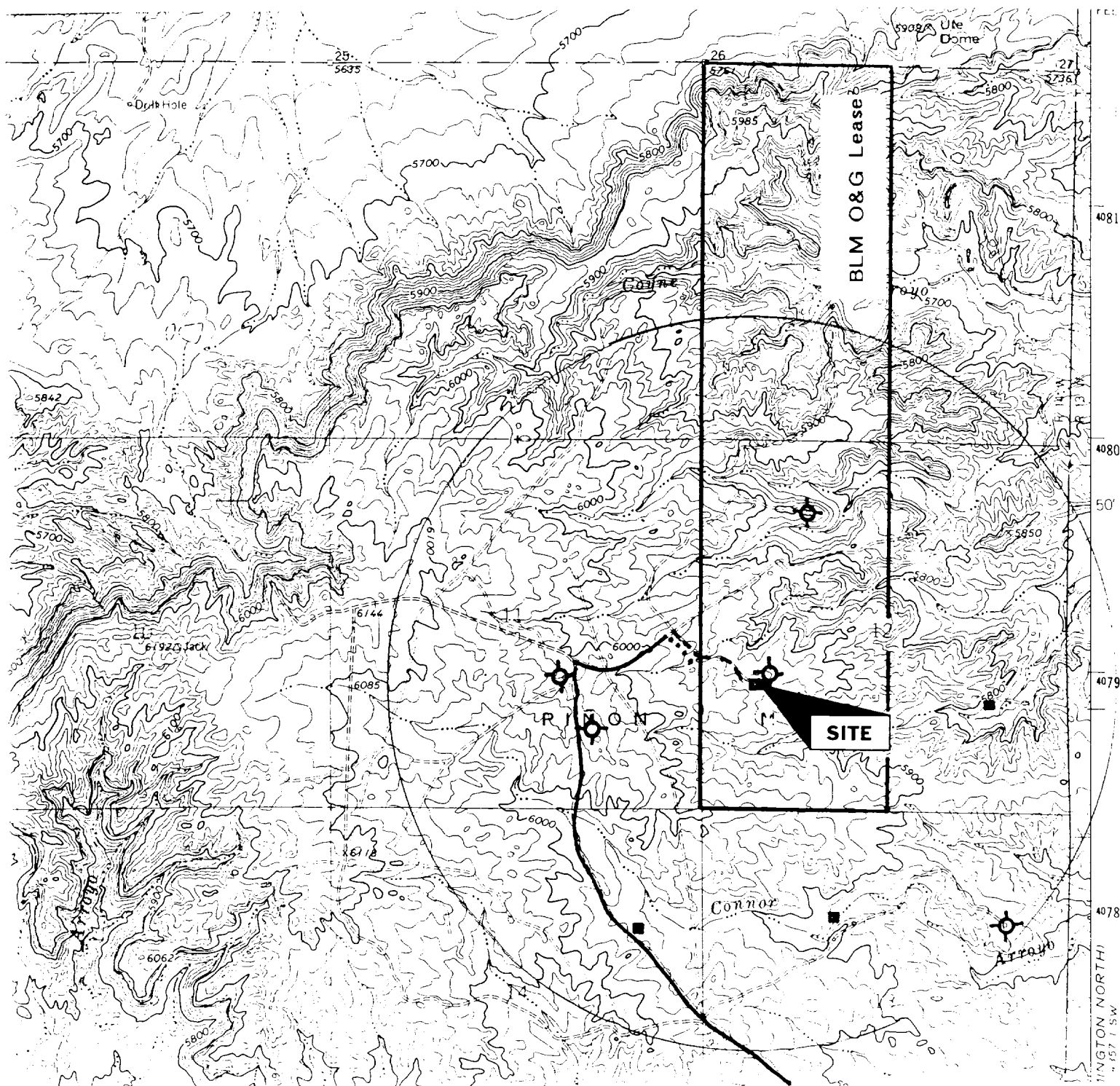
NO ALLOWABLE WILL ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p>Signature <i>Brian Wood</i></p> <p>Printed Name BRIAN WOOD</p> <p>Title CONSULTANT</p> <p>Date JUNE 16, 2001</p>	
<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>Date of Survey 12 DEC 2000</p> <p>Signature and Seal of Professional Surveyor <i>[Signature]</i></p> <p>6844</p> <p>REGISTERED LAND SURVEYOR</p>	

Richardson Operating Co.
 WF Federal 12 #2
 1815' FSL & 828' FWL
 Sec. 12, T. 30 N., R. 14 W.
 San Juan County, New Mexico

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PROPOSED WELL: ■	EXISTING ROAD: ~~~~~
EXISTING WELL: ■	ROAD UPGRADE: - - -
P&A WELL: ⊕	ROAD R/W APPL: . . .

PERMITS WEST INC.
 PROVIDING PERMITS TO LAND OWNERS

Richardson Operating Co.
WF Federal 12 #2
1815' FSL & 828' FWL
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Drilling Program

1. ESTIMATED FORMATION TOPS

<u>Formation Name</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Subsea Elevation</u>
Ojo Alamo Ss	000'	5'	+5,948'
Kirtland Sh	100'	105'	+5,848'
Basal Fruitland Coal	1680'	1685'	+4,267'
Pictured Cliffs Ss	1710'	1715'	+4,238'
Total Depth (TD)*	1840'	1845'	+4,108'

* all elevations reflect the ungraded ground level of 5,948'

2. NOTABLE ZONES

<u>Gas Zones</u>	<u>Water Zones</u>	<u>Coal Zones</u>
Fruitland Coal (1680')	Ojo Alamo (000')	Fruitland Coal (1680')
Pictured Cliffs (1710')	Fruitland Coal (1680')	

Water zones will be protected with casing, cement, and weighted mud. Fresh water encountered during drilling will be recorded by depth, cased, and cemented. Oil and gas shows will be tested for commercial potential based on the well site geologist's recommendations.

3. PRESSURE CONTROL

The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. (A typical 2,000 psi model is on PAGE 3.) Double ram or annular system with a rotating head will be used. All ram preventers and related equipment will be hydraulically tested at nipple up and after any use under pressure to 1000 psi.

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Blind rams will be hydraulically activated and checked for operational readiness each time pipe is pulled out of the hole. All checks of the BOP stack and equipment will be noted on the daily drilling report. BOP equipment will include a kelly cock, floor safety valve, and choke manifold all rated to 2000 psi. Maximum expected pressure is ≈ 735 psi.

4. CASING & CEMENT

<u>Hole Size</u>	<u>O.D.</u>	<u>Weight (lb/ft)</u>	<u>Grade</u>	<u>Age</u>	<u>GL Setting Depth</u>
8-3/4"	7"	20	K-55	New	120'
6-1/4"	4-1/2"	10.5	K-55	New	1,840'

Surface casing will be cemented to surface with ≈ 36 cu. ft. (≈ 30 sx) Class B + 2% CaCl_2 . Volume is based on 100% excess, yield of 1.18 cu. ft./sk, and slurry weight of 15.6 PPG. WOC = 12 hours. Pressure test surface casing to 600 psi for 30 minutes.

Production casing hole will first be cleaned of rock chips by circulating at least 150% of hole volume with mud to the surface. Thirty-five barrels of fresh water will next be circulated. Lead with ≈ 150 cu. ft. (≈ 73 sx) of Class B with 2% metasilicate (yield = 2.06 cu. ft./sk, slurry weight = 12.5 PPG). Tail with ≈ 110 cu. ft. (≈ 93 sx) of Class B with 2% CaCl_2 (yield = 1.18 cu. ft./sk, slurry weight = 15.6 PPG). Total cement volume is ≈ 260 cu. ft. based on 75% excess and circulating to surface.

Production casing will have 4-1/2" cement guide shoe and self fill float collar. Float will be placed one joint above the shoe. Six centralizers will be spaced on every other joint starting above the shoe. Six turbolizers will be placed on every other joint starting from the top of the well.